Advanced Simulation and Computing

ASCI at Livermore

Special Issue:
ASCI White Dedication Ceremony

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Dedication Ceremony for ASCI White Recognizes Current Achievements and Future Commitments

On August 15, 2001, LLNL hosted a dedication ceremony for IBM's *ASCI White*, the world's fastest supercomputer—capable of 12 trillion mathematical operations per second.

The U.S. Department of Energy, National Nuclear Security Administration (NNSA), through its Advanced Simulation and Computing Program (ASCI), will use ASCI White to simulate the performance and ensure the safety and reliability of the weapons in our U.S. nuclear stockpile without nuclear testing.

The computational problems that ASCI White will solve for the science-based Stockpile Stewardship Program come from the activities and responsibilities of all three Defense Programs laboratories—Los Alamos, Sandia, and Lawrence Livermore. Advanced computational simulations using ASCI's 3D modeling capability and the latest visualization technologies are vital components of Stockpile Stewardship. Together, these unprecedented achievements in hardware and software technology make possible a much clearer understanding of the issues involved in supporting the U.S. nuclear weapon stockpile and the scientific judgments required to fulfill our Stockpile Stewardship responsibilities.

ASCI White: "Doing the Real Work of Stockpile Stewardship"

ASCI White's dedication ceremony was held in its 20,000-ft computer room in Building 451. Guests included scientists and administrators from the three Defense Programs laboratories, the IBM Corporation, the DOE/NNSA, and the news media, represented by seven TV crews, five local reporters, CNN, and major wire services.

In his opening remarks, Livermore's ASCI Program Leader David Nowak acknowledged the contributions of the scientists and administrators who played essential roles in ASCI White's success. In addition, Nowak produced a 10-minute video entitled *ASCI White: In Pursuit of National Security,* which briefly chronicled the system installation, integration, and application of IBM's ASCI White through the words and research of Tri-lab ASCI scientists.

The four distinguished speakers who followed Nowak were NNSA Administrator General John Gordon, IBM's Managing Director for U.S. Federal Government Anne Altman, University of California Vice President for Laboratory Management John McTague, and LLNL Director Bruce Tarter. The speakers recognized the integration efforts between LLNL and its IBM partner, the pursuit and achievement of essential milestones in ASCI's Stockpile Stewardship responsibilities, and the Tri-lab utilization of ASCI White's advanced 3D modeling capability and visualization technologies.

General Gordon called ASCI White an important tool on many levels, including "the sustained future of our national security and nuclear deterrent, the future of science and the computer industry, and the future of this great Laboratory."

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NNSA Administrator General John A. Gordon tells a standing-room-only audience that "the foundation of science-based Stockpile Stewardship is to ensure that the nuclear deterrent will continue to be viable in the absence of underground nuclear testing."

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ASCI White Dedication Photo Gallery

General Gordon called the successful application of ASCI White "an encouraging step" in the direction of achieving a 100-teraOPS (100 trillion mathematical operations per second) computer by the year 2005.

LLNL's ASCI Program Leader David Nowak recognized the distinguished guests in the audience and acknowledged the achievements of scientists and administrators from NNSA, the three defense laboratories, and IBM.

KRON TV reporter Greg Lyon's interview with Livermore Computing's John Allen, which ran on both the 6 and the 11 o'clock news, may be viewed at http://www-r.llnl.gov/intranet/movies/ASCI/asciKRON.mov.

On behalf of his entire team, A-Program's Doug Miller accepts an award for successfully completing The Calendar Year 2000 ASCI Burn Code Milepost.

August 15, 2001
Lawrence Livermore National Laboratory

Former LLNL Computation Associate Director David Cooper (right) talks with Anne Altman and Dion Rudnicki from IBM.

The cake for the ASCI White Dedication Ceremony.

UC Vice President John McTague commended the tri-laboratory effort in ASCI White's success.

IBM's ASCI White, capable of 12.3 trillion operations per second, is the fastest computer in the world.

LLNL ASCI Program Leader David Nowak and IBM Managing Director for U.S. Federal Government Anne Altman cut the ASCI White cake at a patio reception following the ceremony.

During the ceremony, General Gordon presented an award to design physicist and Group Leader Cynthia Nitta which honored her B Program Milepost Team for successfully completing The Calendar Year 2001 ASCI Verification and Validation Milepost.

At the close of the ceremony, Lab Director Bruce Tarter acknowledged the early contributions of David Cooper, Vic Reis, and Gil Weigand, then noted how ASCI White is doing the real stockpile work for which it was designed.

Robert Cauble uses the Building 451 PowerWall to illustrate LLNL's research into "Large-scale First-Principles Simulations of Shocks in Deuterium." (See http://www.llnl.gov/asci/news/issue3_01.html for details)

Guests from national and local government, the three defense laboratories, and IBM were invited to a special presentation of ASCI research at the Building 451 PowerWall before the dedication ceremony. From the left: Michael Anastasio, Mike McCoy, and Jeff Wadsworth, Bruce Tarter (LLNL), John McTague (UC), Mim John (Sandia), Rulon Linford (UC) and Bruce Goodwin (LLNL).

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ASCI White...

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Anne Altman, IBM's Managing Director for U.S. Federal Government, called ASCI White "the triumph of vision, perseverance, and plain old-fashioned hard work." Altman noted that the ASCI White computer, which was shipped from IBM to Livermore in 28 moving vans last year, is 1,000 times more powerful than IBM's *Deep Blue,* which defeated chess grand master Garry Kasparov in 1997. Following the ceremony, she and David Nowak continued the practicable partnership between IBM and LLNL by cutting the first pieces from the ASCI White cake at the reception on the Building 451 patio.

After describing the extraordinary IBM/LLNL effort to build the most powerful computer in the world, IBM's Anne Altman asserted, "Our next task is to build one 10 times more powerful."

UC Vice President for Laboratory Management John McTague recognized the Tri-Lab ASCI effort to produce "spectacular technological achievements" such as ASCI White. He further noted that the three laboratories—LLNL, LANL, and Sandia—must continue to operate as a system "to better serve the nation."

At the conclusion of the ceremony, LLNL Director Bruce Tarter asserted that ASCI White was doing the real work of Stockpile Stewardship, "which is delivering what it was designed to do. This is the place at which you can say the program is a success," Tarter concluded.

In addition to the formal dedication ceremony, ASCI scientists Robert Cauble, Tomas Diaz de la Rubia, and Stew Keeton presented their recent research in support of Stockpile Stewardship during a demonstration of high-resolution 3D computer simulations on the Building 451 PowerWall. In the same room, IBM displayed its T-220 prototype desktop flat-panel monitor (formerly known as "Big Bertha"), which is another collaborative effort with LLNL. The T-220, measuring only 22 inches diagonally, can display an entire 3D, 100,000,000-zone graphic onto a scientist's desktop.

Following the ceremony, ASCI scientists and administrators conducted PowerWall demonstrations and interviews with the press, while guests enjoyed an informal reception.

The audience watches as Robin Goldstone defines the "ASCI Spirit" in the video ASCI White: In Pursuit of National Security. *To view this video on line go to: http://www.llnl.gov/asci/news/images/ASCI_White.mpg*

For the construction history and more information about ASCI White, please visit our websites at http://www.llnl.gov/asci/platforms/white/index.html and http://www.llnl.gov/asci/news/white_news.html

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